

Safety News

Making California Workplaces Safer

STATE
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News About Occupational Safety and Health in **MANUFACTURING**

Guard Against Injuries

Many manufacturing operations use robots; machines that can load and unload stock, assemble parts or transfer objects. Robotic tools, machinery and process equipment are often used to perform unsafe, hazardous, highly repetitive or unpleasant tasks. Under normal operating conditions, these devices accomplish tasks faster, easier, and safer for workers. But, there are situations when robots can present mechanical and human hazards both to personnel and equipment. It's important to remember that robots are machines and must be safeguarded in ways similar to those presented for any hazards remotely controlled by machines.

There are many mechanical hazards posed by robotic machines: workers colliding with equipment, being crushed or trapped by equipment or being injured by falling equipment components. A worker could be injured if trapped in the robot's arm or peripheral equipment or because of a failure of the robot's component like the gripper mechanism that releases parts.

Generally, robot accidents do not happen under normal operating conditions but, rather during software program upgrades, maintenance, repair, testing; setup or adjustment. During many of these operations, the operator programmer, or corrective maintenance worker may temporarily be within the robot's working envelope where unintended operations result in injuries. Human errors in judgment result frequently from incorrectly activating the teach pendant or control panel. But, the greatest human judgment error results

when workers become so familiar with the robot's redundant motions that they assume the nature of these motions and place themselves in hazardous positions.

Worker exposure to hazards can be prevented in many operations, by installing perimeter guarding with interlocked gates. Of major concern is whether the computer program, control circuit



or the primary power circuit is interrupted when an interlock is activated. Check your industry's standard for guidance; however, it is generally accepted that the interlock should interrupt the primary motive power to the robot.

For industrial robots the ANSI safety standard, ANSI R15.06-1986, is very informative and presents certain basic requirements for protecting the worker. However, when a robot is to be used in a workplace, the employer should conduct a comprehensive operational safety and health hazard analysis and then devise and implement an effective safeguard system that is fully responsive to the situation. Consult ANSI/B11.19-1990 for effective safeguarding techniques. □

Use Pneumatic Tools Safely

Many tools are used so frequently that it's easy to forget how dangerous they can be to the user and others in the area. Pneumatic tools are especially dangerous because of the extreme force of the compressed air that powers them. When working with a pneumatic or other powered tool, the handler should understand the hazards associated with that tool and practice all safe-operating procedures.

There are various types of pneumatic tools and they include: hammers, riveting guns, staplers, nailers, drills, sanders or sprayers. The greatest danger they present is that of getting hit by one of the tool's attachments or by what's being propelled out of the tool. Pneumatic tools that shoot nails, rivets, staples or similar fasteners should be equipped with a special device to keep the fasteners from being ejected unless the muzzle is pressed against the work surface.

Users of pneumatic tools should always operate them in accordance with the manufacturers' instructions; and before each use, the handler should do a safety check of the tool and hose. If the tool or its parts require repair or replacement, it should be tagged as such and taken out of service. The tool

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Need Regular Checkups**

**Safety Topic – Machine Safety –
Moving Right Along**

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FROM OUR EXPERT

Ventilation Systems Need Regular Check-Ups



You probably don't wait until your tires are flat to check the air pressure. In the same way, you shouldn't wait until the air in your workplace is filled with dust or hazardous materials before checking your local exhaust ventilation system.

Just like any mechanical system, the performance of a ventilation system will change over time if not properly maintained. Filters can become clogged. Material buildup, corrosion, and erosion can affect ducts and fan performance. Pulley belts and bearings can wear out. Ad hoc changes made to a ventilation system can negatively affect performance. Without regular checkups, all this can happen without anyone realizing it.

One aspect of checking a ventilation system is to see if the air is moving the way it should be. You can do this by measuring air velocity or pressure at various points within the system, such as at hoods, in branch ducts, and at inlets and outlets of dust collection systems. Then, compare these measurements to baseline measurements that were taken when the system was first installed. This will help identify problem areas. Keep records and update baseline measurements anytime changes to the system are made.

Use smoke tubes as a quick and easy way to see the pattern of airflow into a hood. By revealing dead spots and eddies, they make a nice complement to airflow measurements.

Visual indicators, such as a Magnehelic gage or a liquid-filled manometer, can tell if there is a problem within the system or if a filter needs to be changed. Make sure employees know how to read these indicators and what to do if readings exceed the appropriate limits. Also, make sure you provide the maintenance or calibration that these instruments require.

Conduct regular visual inspections and check the mechanical performance of system components. This includes hoods, duct work, air cleaning devices, fans, and motors. Again, keep records of all your inspections.

Publications are available to help you establish an inspection and maintenance program. OSHA provides guidance in the *OSHA Technical Manual (OTM)*, available at http://www.osha.gov/dts/osta/otm/otm_toc.html. Another reference is *Industrial Ventilation: A Manual of Recommended Practice for Operation and Maintenance*, published by the American Conference of Governmental Industrial Hygienists. Also, check any manufacturer's recommendations.

If your system is complex or if you don't have the necessary internal resources, consult with an experienced professional, such as a ventilation engineer or an industrial hygienist specializing in ventilation. □

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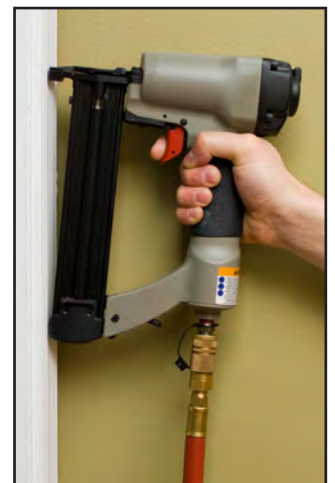
handles should ensure that the tool is securely fastened to the air hose so it will not disconnect during use.

As an added safeguard during operation, a short wire or positive locking device should be attached to the air hose.

When using airless spray guns that atomize paints and fluids they should be equipped with automatic or manual safety devices that will prevent pulling the trigger until the safety device is manually released. There should be a safety clip or retainer installed to prevent attachments, such as chisels on a chipping hammer from being unintentionally shot from the barrel. And, the same precautions should be taken with the attached air hose that

are recommended for other electric cords, because the hose is subject to the same kind of damage and tripping hazards.

Always use the appropriate personal protective equipment, including eye, face, hearing and/or foot protection when using pneumatic tools. For some pneumatic tool work, screens should be installed to protect nearby workers from being struck by flying fragments around chippers, riveting guns, nailers, staplers or air drills. And finally, it must be understood that compressed air guns should never be pointed toward anyone nor should users "dead-end" the tool against themselves or anyone else. □



Topic Review/ Revisión del Tema

Safety Recommendations / Recomendaciones de seguridad

Safety News

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Loss Control Services

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This Newsletter

Did You Know?

Did you know there is a new strain of a highly deadly fungus called **Cryptococcus gattii** discovered in the Northwestern United States? According to the Centers for Disease Control, this fungus has killed six people in Oregon, and has moved on to California. This new strain of *Cryptococcus gattii* is an airborne fungus, native to tropical and subtropical regions. In 1999 this fungus was detected in Canada; and no one knows how it got to North America, and grows in a temperate climate.

Known to affect healthy people; it is expanding geographically. People and animals can become infected with *Cryptococcus gattii* by inhaling the microscopic organisms.

There is no vaccine or other preventive measures available for this new fungal strain, although infection can be treated with antibiotics. The best cure is early diagnosis and treatment. The symptoms appear several months after exposure to the fungus, which are a bad cough, shortness of breath among other symptoms. Unlike viruses, fungal infections cannot be passed from person to person. For further information go to <http://www.state-fundca.com/safety/losscontrol/LossControlArticle.aspx?ArticleID=628>. □

Employer Education Series

State Fund continues to promote community educational outreach by increasing the quantity and frequency of employer seminars. These seminars are produced and sponsored by State Fund and are open to State Fund policyholders. The seminar topics cover all aspects of worker's compensation and are offered statewide.

As part of State Fund's Employer Education Series, the local State Fund Loss Control departments offer safety seminars dedicated to loss prevention. They feature safety training targeted to specific industries and safety topics of interest to California employers. Various programs in the series are developed in conjunction with State Fund insured Group Programs and external affiliates and partners. Some of these partners are occupational safety and health providers such as Cal/OSHA Consultation Service, the Department of Health Services, and the University of California.

The goal of State Fund's Employer Education Series is to present valuable information from recognized safety and health experts to enable employers to reduce the frequency and severity of workplace injuries, facilitate regulatory compliance, and increase business profits.

The program venues provide the opportunity for attendees to have their workplace safety questions immediately and personally answered by industry experts. The typically half-day seminars are usually held at regional State Fund offices. To learn what programs are scheduled in your area, visit www.scif.com and click on Seminars. □

Reporting Work-Related Injuries

State Fund's Claims Reporting Center (1-888-222-3211) is available 24 hours a day, 7 days a week for policyholders to report injuries as soon as they occur. Agents will do the necessary paperwork to get the claim started and refer the injured to the designated physician or provider.

Within 8 hours of any serious illness or injury (requiring hospitalization over 24 hours, other than for medical observation or where there is permanent employee disfigurement) or death occurring in the workplace or in connection with employment, employers must report the incident to the Division of Occupational Safety and Health. □

This Manufacturing Safety News is produced by the Safety and Health Services Department of State Fund to assist clients in their loss control efforts. Information or recommendations contained in this publication were obtained from sources believed to be reliable at the date of publication. Information is only advisory and does not presume to be exhaustive or inclusive of all workplace hazards or situations. Permission to reprint articles subject to approval by State Compensation Insurance Fund.

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